

markets) are high, but because the rents available from exploiting market positions protected from open competition are high, and many competing claimants would dearly love to enjoy the privilege.³⁷

The upshot is that there is no difference of economic substance between the intangible rights held by cable franchisees and the intangible rights held by cellular telephone companies. Both convey privileges not afforded potential competitors, thereby protecting licensees from rivalry, and allowing both prices and profits to be above competitive levels. This is, incidentally, why both cable companies and cellular telephone companies have Q ratios which reveal large degrees of monopoly profits.

4.2 The Haring & Jackson Attack On Government Numbers.

I am accused by Haring & Jackson of "play[ing] fast and loose with the numbers,"³⁸ and of a presentation which is "not candid;"³⁹ all of which leads to the outright condemnation: "Hazlett is, in truth, playing games."⁴⁰ I wish I were, but can assure the reader that I am fortunate to have discovered a host of more pleasurable recreational forms. The truly remarkable part of this broadside is that, so as to avoid controversy regarding the numbers, I used more conservative assumptions than the authors themselves have employed in Q ratio

³⁷ The government could easily intensify competition for licenses by electing to award fewer licenses of a given size -- even if, by restricting the amount of spectrum allocated, it incurs *lower* "social opportunity costs" of spectrum. By creating less competitive conditions in the licensed market it excites rent-seeking behavior.

³⁸ Haring & Jackson, p. 6.

³⁹ *Ibid.*, p. 8.

⁴⁰ *Ibid.*

analysis,⁴¹ and made use of official government statistics wherever possible (and cited them as such).⁴² These have now turned into "Hazlett's numbers," and I don't think the credit I am garnering is meant as a compliment.

For instance, Haring & Jackson write: "Hazlett estimates that cellular firms have a capital investment of \$500 per subscriber." They claim this is less than half the level of actual investment, based upon their reading of a Wall Street analyst's report.⁴³ My numbers were taken from, and cited to, the Congressional Budget Office report released in March 1992.⁴⁴

The CBO concluded, just as I did, that the evidence pointed to supra-competitive returns:

Currently, about 80 percent of subscribers are business customers who use an average of 175 minutes of service a month, which translates into an average monthly operating cost of under \$20. The \$60 differential between the monthly operations cost of service and

41 For instance, I didn't depreciate cellular capital costs when calculating the Q ratio. Since the "replacement cost of capital" is lowered if capital costs are (properly) depreciated, this raises the industry Q. In that Haring & Jackson claim that depreciation is rapid (and attack me for using a ten year capital depreciation schedule), this would serve to raise Q by a lot. Note that Shooshan & Jackson did deduct depreciation from the replacement cost of capital (which lowered the denominator of Q). Shooshan & Jackson, Inc., "Opening the Broadband Gateway: The Need for Telephone Company Entry Into the Video Services Marketplace," (October 1987) [hereinafter "Shooshan & Jackson 1987"], p. 11.

42 The situation reaches a *reductio ad absurdum* on page 7 of the Haring & Jackson paper. The table entitled, "Capital Investment in Cellular," boldly points out, "Note: Hazlett did not survey cellular systems to obtain information on capital investment." I plead guilty: I simply used the first set of official statistics I found. One might also note that if I had been trying to pad numbers, it is curious to note that when presenting the NTIA's numbers on cellular license rents (my Table 5, p. 16), I didn't even adjust them to include the RSA's, which contain over one-fifth of the U.S. population. (This would have increased the total cellular license rents about one-tenth.)

43 Haring & Jackson, p. 6.

44 Congressional Budget Office, Auctioning Radio Spectrum Licenses (March 1992) [hereinafter "CBO 1992"], p. 17.

monthly revenue is by most accounts more than sufficient to cover fixed capital and marketing costs, and to account for very high profits.⁴⁵

Moreover, just as I did, they attributed this to market power of the cellular duopolists:

Financial analysts anticipate that cellular telephone companies will earn rates of return on investment in physical capital of 40 percent to almost 100 percent as they exploit the combination of a desirable service and the freedom from serious price competition permitted by the duopolistic market structure.⁴⁶

The CBO estimates were themselves taken from a Wall Street analyst's report which the CBO found appropriate to use in its study. I chose to use CBO numbers, rather than produce independent estimates, precisely to avoid the charge of arbitrariness which Haring & Jackson levy but which -- by picking and choosing their own numbers -- should more accurately be leveled against them. Moreover, if investment in physical plant per subscriber is \$1,170, as suggested by Haring & Jackson (p. 7), it is curious that total "cumulative capital investment" in the cellular industry as of June 1993 is \$12.776 billion against a subscriber base of 13.067 million.⁴⁷ This means that the industry has spent less than \$1000 per subscriber *undepreciated*.

⁴⁵ *Ibid.*, p. 26; to which the footnote reads: "Even this rough estimate of \$60 a month difference is low. The monthly average cost of less than \$20 per month is based on the average business customer's use, while the average revenue figure includes residential customers who use cellular phones less."

⁴⁶ *Ibid.*, p. x.

⁴⁷ This comes out to about \$978 per subscriber (Cellular Telecommunications Industry Association, *Mid-Year Data Survey*). As of June 1992, which is the date for which Haring & Jackson list their numbers, the total accumulated capital per subscriber was \$1,043. In taking all accumulated capital expenditures and not figuring in depreciation, we bias the average capital cost upwards, of course.

But these are relatively minor distortions. Some of the Haring & Jackson attack is so gratuitous as to be daring. For instance, in thwacking my allegedly "not candid" citation of the NTIA's cellular license value figures of \$80 billion nationally, which I labeled "the present value of duopoly profits" (and to which they added emphasis⁴⁸), they attempt to contradict my characterization by noting that "the NTIA *itself* states that its goal was more inclusive."⁴⁹ They quote the NTIA as saying it was attempting "...to estimate the current value of a particular portion of spectrum used for a designated purpose."⁵⁰ Nothing in *those* NTIA words reveals what they thought about the effect of market structure on profits or license values. (The current value of licenses could well include a hefty increment for duopolistic output restriction, or not.) So the criticism that I am "not candid" is somewhat baffling... until we see what Haring & Jackson fail to report from the NTIA study:

*These estimates of spectrum value in urban areas [MSAs] reflect the existing duopoly market structure. If additional competitors were to enter the market, the profits of cellular providers would presumably fall (i.e., the monopoly rents would drop), so that the value of spectrum devoted to cellular uses would be lower.*⁵¹

It is apparent who is being "uncandid" with whom.

4.3 The Haring & Jackson Attack on Private Market Value Numbers.

In presenting NTIA data on the value of cellular telephone systems, I used the estimates which showed the private market sales price data for cellular systems: about \$80 billion nationally (MSAs only). The NTIA also reported a lower estimate of cellular telephone

⁴⁸ Haring & Jackson, p. 8.

⁴⁹ *Ibid.* (emphasis in original).

⁵⁰ *Ibid.*, quoting NTIA 1991, p. D-1.

⁵¹ NTIA 1991, p. D-6. Note too that the NTIA refers to "monopoly rents" as attendant to duopoly market structure. This is the standard lexicon.

license values based upon public market values: \$46 billion. For using the larger number, Haring & Jackson write excitedly that "the lower one... has simply *disappeared* from Hazlett's presentation of the evidence."⁵²

It is not wrong to use private market values rather than public market values,⁵³ and it is clear that at least one of the authors of the Haring & Jackson paper agrees with me: In the 1987 paper they prepared for the U.S. Telephone Association, Chip Shooshan and Charles Jackson estimated the market value of a cable system by looking solely at the price of cable systems actually sold -- *i.e.*, its private market value. This study did not even consider public market valuation as an alternative, despite the fact that the values of public companies holding cable systems are often discounted by 30-40%. Indeed, at just the time Shooshan & Jackson were using private market values to estimate cable Q ratios, the public market was valuing cable systems at just 53% of private market values, according to Paul Kagan's *Cable TV Investor*, prompting the industry newsletter to remark that "The 53%-of-PMV [private market value] figure is the lowest in years..."⁵⁴

The reason that actual trading prices of cellular systems are more appropriate benchmarks of market value is that such prices do not entail some of the complications involved in sorting out the value of other assets owned by public corporations, the publicly-held systems may sell at a discount due to the transactions costs associated with assembling and managing

52 Haring & Jackson, p. 8, (emphasis in original).

53 The term "private market" refers to actual sales of cellular (or cable television) systems, even if the transactors are public companies. The "public market" refers to the valuation of the companies which own cellular (or cable) systems.

54 *Cable TV Investor* (12 February, 1988; p. 3). The differential in public vs. private market values in cable is still significant. In mid-1993, Paul Kagan & Associates reported that public companies in the cable business were selling for just 64% of 10X cash flow, while private market transaction values were averaging 10X cash flow (or 100%). Paul Kagan & Associates.

the various assets in the company's portfolio, and there may be tax (or other) liabilities which the firm has accrued and which are difficult to separate from asset values. (This is similar to the paradox that closed-end mutual funds have been known to trade for significant discounts from the prices of the underlying stocks which they own, despite the fact that the funds consist *only* of the underlying stocks.⁵⁵) Indeed, the Congressional Budget Office made use of the NTIA's private market figures with no mention of public market discounts:

NTIA has estimated that cellular licenses in the more than 300 MSAs would be worth \$80 billion. The estimate was predicated on a sample of 24 transactions made in 1990... It is based on a small sample, although many other transactions support the levels used. It incorporates the value of the existing duopoly regulatory structure, and thus would have to be adjusted downward if conditions closer to a competitive market were to be created by new entrants.⁵⁶

The prices paid in actual sales seems to me, as it did to Charles Jackson when he was writing about cable's market power, a reasonable estimate of value. Yet, if the lower figure is used, this certainly does not eliminate the supra-competitive returns associated with a cellular telephone license. \$46 billion is still higher than zero, and realistic Q ratios constructed with such values are still comfortably above unity, as seen below.

4.4 The Haring & Jackson Attack on Jackson's Numbers.

In Charles Jackson's 1991 report on the costs of delaying cellular service the very same issue -- valuation of cellular telephone companies -- was addressed. Jackson's own study wrote:

55 "Discounts of 20% are common, and even higher discounts are sometimes observed." Andre Schleifer and Richard Thaler, "Investor Sentiment and the Closed-End Fund Puzzle," paper presented to the Finance Workshop, University of Chicago (September 1989), p. 1.

56 CBO 1992, p. 36. The CBO also refers to the \$80 billion MSA license estimate as an "upper bound," by which it refers to the magnitude of revenues which could be realized from auctioning more competitive licenses in the future.

Our estimate of the surplus associated with cellular properties equals the total market value of cellular properties less capital investment... The total market value component was extracted from NTIA's methodology based on recent sales transactions. NTIA calculated the 1990 total market value of cellular properties in urban areas to be approximately \$87 billion.⁵⁷

No mention is made of public market discounts. Or, to paraphrase Haring & Jackson: "the lower one... has simply *disappeared* from Haring & Jackson's presentation of the evidence."

Haring & Jackson also criticize my use of 10-year depreciation rates for cellular's capital equipment:

[T]he idea that any investment in electronics should have an economic lifetime of 10 years is mind-boggling given the rapid pace of technical innovation in that industry. Our own view is that a lifetime of 5 years more properly reflects the likely decline in economic value of cellular plant.⁵⁸

They go on to recalculate capital costs based upon shorter depreciable lives.

Yet, cellular investments are not only electronic, but composed of a mix of physical inputs. It is reasonable to conclude that ten years is the appropriate lifetime. At least, it was according to Charles Jackson, who previously "boggled his mind" sufficiently to write the following:

We can conservatively assume that the life of [cellular] base-station investments is 10 years. Switching and other electronic equipment may have somewhat shorter lives, but land and structures have much longer lives.⁵⁹


⁵⁷ NERA 1991, p. 11. Since NTIA estimated capital replacement cost at about \$7 billion, this produced a net license value estimate of \$80 billion.

⁵⁸ Haring & Jackson, p. 7.

⁵⁹ 1991 NERA Report, p. 17.

CERTIFICATE OF SERVICE

I, Ellen S. LeVine, hereby certify that on this 18th day of October, 1994 a true and correct copy of the foregoing REPLY BY CALIFORNIA TO OPPOSITIONS TO CPUC PETITION TO RETAIN REGULATORY AUTHORITY OVER INTRASTATE CELLULAR SERVICE RATES and APPENDICIES TO REPLY BY CALIFORNIA TO OPPOSITIONS TO CPUC PETITION TO RETAIN REGULATORY AUTHORITY OVER INTRASTATE CELLULAR SERVICE RATES were mailed first class, postage prepaid to all parties on the attached list.



Ellen S. LeVine

/dbn

Service List PR 94-105

Richard McKenna
GTE SERVICE CORPORATION
600 Irving Ridge
HQE03J36
Irving, TX 75015-6362

William J. Sill
R. Bradley Koerner
MCFADDEN, EVANS & SILL
1627 Eye Street, N.W.
Suite 810
Washington, D.C. 20006

Joel H. Levy
William B. Wihelm, Jr.
COHN AND MARKS
1333 New Hampshire Ave. N.W.
Suite 600
Washington, D.C. 20036
National Cellular Resellers Assoc.

Regina Harrison
PRIVATE MOBILE SERVICE DIVISION
FEDERAL COMMUNICATIONS COMMISSION
1919 M Street, N.W.
Room 644; Mail Stop 1600D
Washington, D.C. 20054

David A. Gross
Kathleen Q. Abernathy
AIRTOUCH COMMUNICATIONS
1818 N Street, N.W.
8th Floor
Washington, D.C. 20036
Attorneys for AirTouch Communications

Mary B. Cranston
Megan Waters Pierson/Joseph A. Hearst
PILLSBURY MADISON & SUTRO
P.O. Box 7880
San Francisco, CA 94120-7880
Attorneys for AirTouch Comm.

Alan R. Shark
AMERICAN MOBILE TELECOMMUNICATIONS
ASSOCIATION, INC.
1150 18th Street, N.W.
Suite 250
Washington, D.C. 20036

Elizabeth R. Sachs
LUKAS, MCGOWAN, NACE & GUTIERRIEZ
1111 19th Street, N.W.
Suite 1200
Washington, D.C. 20036
Attorney for American Mobile
Telecommunications Assoc.

David A. Simpson
YOUNG, VOGL, HARLICK & WILSON
425 California Street
Suite 2500
San Francisco, CA 94101
Attorney for Bakersfield Cellular
Telephone Company

Adam A. Anderson
Suzanne Toller
BAY AREA CELLULAR TELEPHONE CO.
651 Gateway Boulevard
Suite 1500
South San Francisco, CA 94080

Richard Hansen
CELLULAR AGENTS TRADE ASSOC.
11268 Washington Blvd.
Suite 201
Culver City, CA 90230

Michael B. Day/Jerome F. Candelaria
Jeanne M. Bennett/Michael J. Thompson
WRIGHT & TALISMAN, P.C.
100 Bush Street
Shell Building, Ste. 225
San Francisco, CA 94104
Attorneys for Cellular Carriers
Assoc. of Calif.

Michael F. Altschul/Randall S. Coleman
Andrea D. Williams
CELLULAR TELECOMMUNICATIONS INDUSTRY
ASSOCIATION
1250 Connecticut Avenue, N.W.
Suite 200
Washington, D.C. 20036

Mark Gascoigne
Dennis Shelley
INFORMATION TECHNOLOGY SERVICE
INTERNAL SERVICES DEPARTMENT
9150 East Imperial Highway
Downey, CA 90242
Attorneys for County of Los Angeles

Russell H. Fox
Susan H.R. Jones
GARDNER, CARTON & DOUGLAS
1301 K Street, N.W.
Suite 900, East Tower
Washington, D.C. 20005
Attorneys for E.F. Johnson Company

David M. Wilson
YOUNG, VOGL, HARLICK & WILSON
425 California Street
Suite 2500
San Francisco, CA 94104
Attorney for Los Angeles Cellular
Telephone Company

Scott K. Morris
MCCAW CELLULAR COMMUNICATIONS, INC.
5400 Carillon Point
Kirkland, Washington 98033

Howard J. Symons/James A. Kirkland
Cherie R. Kiser/Kecia Boney/Tara M.
Corvo
MINTZ, LEVIN, COHN, FERRIS
GLOVSKY AND POPEO, P.C.
701 Pennsylvania Avenue, N.W.
Suite 900
Washington, D.C. 20004
Attorneys for McCaw Cellular
Communications, Inc.

James M. Tobin
Mary E. Wand
MORRISON & FOERSTER
345 California Street
San Francisco, CA 94104-2576
Attorneys for McCaw Cellular
Communications, Inc.

Thomas Gutierrez
J. Justin McClure
LUKAS, MCGOWAN, NACE &
GUTIERREZ, CHARTERED
1111 Nineteenth St., N.W.
Suite 1200
Washington, D.C. 20036
Attorneys for Mobile Telecommunications
Technologies Corp.

Jeffrey S. Bork
Laurie Bennett
U.S. WEST CELLULAR OF CALIFORNIA, INC.
1801 California Street
Suite 5100
Denver, CO 80202

Leonard J. Kennedy
Laura H. Phillips/Richard S. Denning
DOW, LOHNES & ALBERTSON
1255 23rd Street, N.W.
Washington, D.C. 20037
Attorneys for Nextel Communications, Inc.

Mark J. Golden
PERSONAL COMMUNICATIONS INDUSTRY
ASSOCIATION
1019 Nineteenth Street, N.W.
Suite 1100
Washington, D.C. 20036

Michael Shames
1717 Kettner Blvd.
Suite 105
San Diego, CA 92101
Attorney for UCAN AND TURN

Peter A. Casciato
A PROFESSIONAL CORPORATION
8 California St.
Suite 701
San Francisco, CA 94111

Lewis J. Paper
KECK, MAHIN & CATE
1201 New York Ave. N.W.
Washington, D.C. 20005
Attorneys for Cellular Resellers
Assoc. Inc., Cellular Service Inc., and
ComTech, Inc.

Judith St. Ledger - Roty
James J. Freeman
REED, SMITH, SHAW & MCCLAY
1200 18th St., N.W.
Washington, D.C. 20036
Attorney for Paging Network, Inc.